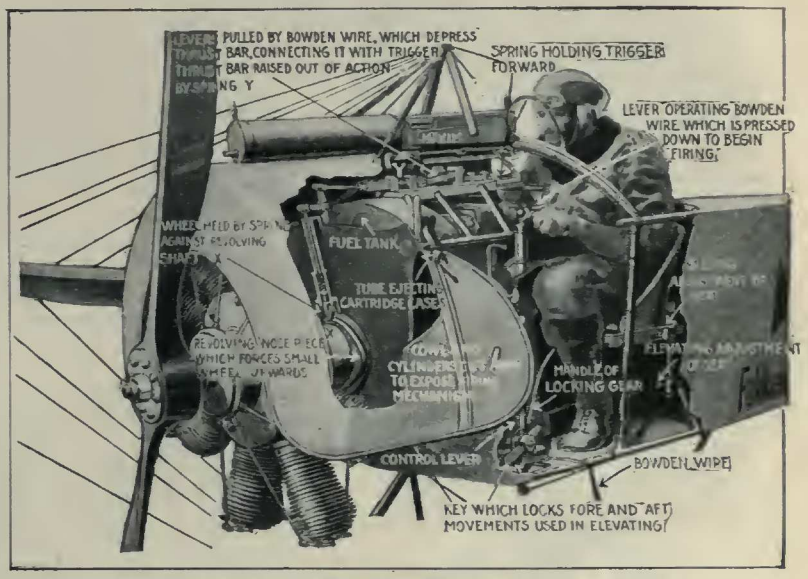
The Cavalry Horse of the Air

At last the secret of German fighting aeroplanes is revealed

By Carl Dienstbach

BY this time everyone has heard of the famous Fokker aeroplanes — the fighting chariot of the air in which the famous German aviators Immelman and Boelke performed so many daring exploits! Very little has been published by the Germans about the Fokker beyond the fact that it is swift and strong, and that it can shoot up like a balloon, plunge like a stone, rise again, tumble about, and fight like a cavalry horse, all because of its excessive power and its extreme lightness.



A cut-away drawing showing the construction of the Fokker aeroplane with its machine gun which is aimed by swinging the entire craft

Much more is now known of the Fokker. Interesting as its construction is, still more interesting is its single machine gun and the manner in which it is fired. August Euler patented the idea of aiming a gun not by swinging the weapon itself, but by manipulating the air craft on which it was mounted. That was the underlying idea carried out in the machine-gun mounting of the Fokker. Euler exhibited his device in 1912 at the Berlin Aeroplane Exposition. Prince Henry of Prussia no sooner saw it there than he ordered it to be withdrawn at once and guarded as a military secret.

Military experts have always wondered what is the best way of making an attack in the air. Ramming is obviously impossible. Bomb dropping is uncertain at high speed even at close range. Euler's invention solved the problem for the Germans. Mount a machine gun on an aeroplane so that the entire craft must be turned in order to aim the gun and a kind of ramming principle is at once applied without endangering either the machine or the rammer. The firing ranges, to be sure, are short—at most a hundred yards.

Since in racing monoplanes of the Fokker type the propeller is mounted in front, the technical difficulty of firing the gun through the blades of the swiftly revolving propeller had to be overcome. An aeroplane motor explodes thousands of charges of mixed air and gas in a minute; a machine gun fires about six hundred shots a minute. If it is possible to time thousands of motor explosions with mathematical nicety, surely it is not an impossibility to time rapid but less frequent machine gun discharges with equal ease. The propeller blades intercept the gun only during the one-fortieth part of the time required for a complete revolution. The solution was simple: Let the motor operate the machine gun and fire it at the proper time. And so that was done.

The operation of the gun by the marksman is not in the least interfered with. The pulling of the trigger indicates merely when firing should begin and end. It must not be forgotten that the propeller of the machine is directly coupled to the motor, as our illustration shows, and that it makes more revolutions a minute than the most rapid automatic gun would make firing shots in the same length of time.